Aerospace Engineer, GS- 0861-14

AST- Aerospace Flight Systems, NCC: 725-12

Position Number: GS04F69

Introductory Statement: The incumbent in this position serves as an Observatory Manager on a Flight Program/Project at the Goddard Space Flight Center. The work includes advising on, coordinating, monitoring, or performing work in several phases of technical and resources planning and programming. The work may include designing, implementing, and maintaining technical management functions typically involving two or more areas of management functions such as resources analysis, technical management systems, technical engineering operations management, or configurations management; Duties may also include monitoring contractors engaged in this work. The following major duty areas comprise tasks and duties directly related to AST-Technical Management work, NCC 770-30, as described in the AST Definition for that specialty level. The specialty knowledge described in the definition is needed to perform the duties of this job in addition to the knowledge described below.

Performs Flight Systems Aerospace Engineering Work 25%

As a recognized authority in a flight systems specialty, applies state-of-the-art knowledge to the development of new and innovative methodologies. Monitors and directs the design, development, and production of flight systems and ensures the compatibility of all systems and subsystems.

Performs Contractor Oversight 25%

Initiates contact and provides expert technical advice and direction to contractor professionals. Serves as a senior technical contact. Keeps the Contracting Officer informed on progress, proposed contract modifications, validity of claims, analysis of proposals, and assessment of contract time extensions.

Work complexities require the development of alternate solutions to reduce time and costs, versatility and innovation, and short cuts or compromises that are considered risky. Resolves unusual demands caused by extraordinary urgency, safety, or economic restraints in areas such as life science or measurement and instrumentation systems. Contributes to the accomplishment of agency program objectives, such as challenging agency standards for implementation of project/program management systems, operations, and controls.

Technical Resources Management Work 20%

Manages resources and/or resource allocations, requirements definition, integration, and review for broad projects and programs with national impact. Advises and consults with all levels of management, headquarters personnel, and other federal agencies, on technical and resource requirements in the design or construction of facilities, systems, or equipment. Resolves problems, integrating difficult and complex factors to negotiate changes and requirements. Develops policy. Establishes review processes and control systems.

Conducts technical reviews, performs programmatic analysis and assessments, and modifies resource allocations as required. Technical decisions and determinations are accepted as authoritative.

Establishes and maintains liaison with program managers and other project offices to ensure proper distribution of resources and adequate funding. Coordinates budget development and local authority funding actions for projects or programs. Conducts budget presentations.

Observatory Technical Management 20%

Directs and manages significant elements or phases of projects related to major organizational functions, programs, or projects. Overcomes and resolves difficult and complex technical, project management, and organizational problems using innovative and original approaches. Plans, guides, coordinates, and manages the work of subordinate, secondary, and matrixed resources engaged in accomplishing the missions and functions of the organization.

Performs periodic review and analysis to assess achievement of major goals. Provides engineering analysis for special projects, future projects, and in advance planning of new systems and capabilities of all applicable agency programs and areas of concern and responsibility. Participates in preliminary and critical design reviews and determines, develops, and defends requirements. Responsible for operations, maintenance, and sustaining engineering planning and execution.

Performs Engineering Project Planning Duties 10%

Plans and coordinates projects in unexplored areas where there is little or no theory so new techniques and approaches are needed. Evaluates new technologies and processes in area of expertise. Recognized as an expert authority in the engineering field. Develops, reviews, and provides recommendations for proposed project requirements, expected results, and budgetary estimates. Analyzes and consolidates project approaches and resource requirements including areas such as management and operations. Establishes methods and procedures to substantially reduce project costs. Provides expert guidance to management for strategic planning and program development in areas such as life science or measurement and instrumentation systems.

OTHER SIGNIFICANT FACTS:

Position requires overnight travel 6-10 nights per month.

In order to qualify for this position, incumbent must possess a bachelor's degree appropriate to the position.

Performs other duties as assigned.

Serves as Contracting Officer Technical Representative (COTR).

Serves as technical liaison between the contractor and the Contracting Officer by monitoring the contractor's performance and delivery of the final products and/or services under the contract.

Assures technical proficiency and compliance with the technical provisions of the contract by reviewing and verifying the performance of work by the contractor.

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Ensures the contractor complies with the defined Statement of Work or specifications included in the contract. Assists the contractor and the Contracting Officer in interpreting technical requirements of the contract scope of work or specifications.

Reviews and evaluates the contractor's progress related to expenditures, and recommends approval/disapproval for payment as appropriate.

Recommends and justifies changes desired in scope and/or technical provisions of the contract.

Factor 1- 8 Knowledge Required by the Position

The position requires a mastery of the concepts and principles of aerospace engineering to resolve novel or obscure problems; extend and modify techniques; develop new approaches that guide other engineers who solve a variety of technical problems; and/or apply new, innovative, or experimental aerospace engineering theories, developments, or practices to problems or studies not susceptible to treatment by acceptable methods.

Factor 2- 5 Supervisory Controls

The supervisor provides guidance solely in the form of general legislative, mission, or policy directions and resource constraints. The engineer typically initiates new projects or activities independently and keeps the supervisor informed of progress in planning, coordinating, and implementing the work and resolving conflicts. Recommendations and decisions of the engineer are accepted as technically sound even though final approval may depend on formal action by high-level management. The engineer has the highest degree of independence in seeking optimum technical or policy solutions to problems in the light of current engineering developments. Completed work is broadly reviewed for adherence to mission or legislative direction and for assurance that broad policy or program objectives are fulfilled.

Factor 3- 5 Guidelines

Guidelines are basic legislation and/or broadly stated agency regulations and policy statements. At this level the engineer is a recognized technical authority in the interpretation of such broad guidelines, and must exercise considerable judgment and ingenuity in interpreting and adapting guides that exist; in developing new and improved hypotheses, concepts, or approaches not previously tested or reported; and/or in developing new policies that have the potential to take the organization (and the affected public) in new directions. The ideas, methods and procedures developed are on the cutting edge of technology and often serve as precedents for other scientists, engineers, or policy-makers within or outside the agency.

Factor 4- 5 Complexity

Assignments are of such breadth, diversity, and intensity that they involve many varied and complex features, and typically contain a combination of complex features that involve serious or difficult to resolve conflicts between engineering and management requirements. The work requires originating innovative scientific/engineering techniques, establishing criteria and standards applicable to wide range of engineering problems and conditions, or developing new scientific concepts or approaches that advance the state-of-the-science.

Factor 5- 5 Scope and Effect

The work includes the resolution of a broad range of critical or highly unusual engineering problems, development of innovative approaches or guides, or the determination of the

problems, development of innovative approaches or guides, or the determination of the effectiveness and validity of proposed or current policies and programs. The engineer serves as an expert advisor and consultant to officials and managers within or outside the agency on a broad range of engineering activities and broad policy issues.

Factor 6- 3 Personal Contacts

Personal contacts include a wide range of professional and administrative personnel throughout the agency, at other federal agencies, in state and local government, private industry, academia, consumer advocacy groups, and in some cases the media and elected officials.

Factor 7- 4 Purpose of Contacts

The purpose of contacts is to justify, defend, negotiate, or settle controversial and far-reaching matters through active participation in conferences, meetings or presentations. The persons contacted typically have diverse viewpoints, goals, or objectives, requiring the engineer to achieve a common understanding of the problem and a satisfactory solution by convincing others, arriving at a compromise, or developing suitable alternatives.

Factor 8- 1 Physical Demands

The work is primarily sedentary, although some physical effort may be required, e.g., walking, standing, carrying light items such as manuals or briefcases, or driving or traveling by motor vehicle.

Factor 9- 1 Work Environment

The work environment involves everyday risks or discomforts that require normal safety precautions typical of such places as offices, training rooms, and libraries. The work area is adequately lighted, heated, and ventilated. There may be occasional exposure to moderate risks or discomforts in storage areas or hazardous waste sites.

Aerospace Engineer, GS- 0861-15

Position Number: GS04F70

Introductory Statement: The incumbent in this position serves as an Observatory Manager on a Flight Program/Project at the Goddard Space Flight Center. The work includes advising on,

Performs Flight Systems Aerospace Engineering Work 25%

Exercises recognized technical leadership in a flight systems specialty, outstanding creativity, and exceptional scientific and engineering judgment to prove or disprove the feasibility of ideas

Provides final expert opinion on the design of flight systems projects characterized by constantly, and sometimes greatly, changing physical environment or other similar variables

Performs Contractor Oversight 25%

Integrates and coordinates the efforts of agency personnel with those of contractors in research, development, and engineering. Incumbent has a far-reaching effect on the work and

Provides authoritative technical decisions, advice, and consultation to contractors on variables and unknowns affecting planning, coordination, and critical problems with respect to safety,

planning and implementing precedent-setting national standards for project/program management systems, operations, and controls.

Technical Resources Management Work 20%

Directs and manages budget and resource planning activities for a NASA engineering program of national or international scope and impact. Serves as an expert consultant on the most challenging technical problems in field of specialty. Maintains close contact with headquarters, field centers, commercial industry representatives, and international partners to integrate resource planning elements in the areas of advanced technology and engineering application.

Analyzes and plans long-range resource requirements, scheduling, budgeting, and program allocations. Develops long-range program planning and control systems. Reviews and assesses long-range mission planning of projects to anticipate impacts on resources. Integrates program schedule requirements and resource directives. Establishes policy and advises on policy development.

Represents Center at inter-agency meetings, and chairs and participates in boards, panels, and committees. Charters working groups and committees to coordinate resources management.

Observatory Technical Management 20%

Is recognized as an expert and leading authority in overall program definition, organization, management, and direction. Makes technical and managerial contributions that have significant influence throughout the organization and that solve mission-critical problems.

Manages and directs overall development efforts for a significant end product or a major subject-matter entity of extensive scope and variety, such as all electronic and electrical systems for a variety of manned spacecraft. Makes substantial and continuing contribution to long-range project planning and to the formulation, modification, and determination of overall objectives. Recognizes and identifies technology requirements in advocating future projects and activities and in organizing program plans.

Serves as an authoritative source of information for decisions and guidance concerning changes in operations relating to the management of the total project effort. Analyzes internal and external customer requirements, presenting needed changes or activities to the highest levels of management. Coordinates with other offices within the project to establish content, cost, schedule of products, deliverables, and services. Interacts with senior management to formulate agreements and plans for institutional support of project activities.

Performs Engineering Project Planning Duties 10%

Serves as an expert consultant in planning, monitoring, and administering projects of national or international significance characterized by a constantly and sometimes greatly changing physical environment, critical problems, or other similar variables and unknowns. Provides overall technical insight into the development and management of policies, procedures, and operational schedules necessary for new and on-going systems and functions in areas such as

operational schedules necessary for new and on-going systems and functions in areas such as life science or measurement and instrumentation systems. Performs pre-project planning duties, such as concept development, master integration planning, operations planning, and programming design for projects, taking into account feasibility, costs, and performance.

OTHER SIGNIFICANT FACTS:

Position requires overnight travel 6-10 nights per month.

In order to qualify for this position, incumbent must possess a bachelor's degree appropriate to the position.

Performs other duties as assigned.

Serves as Contracting Officer Technical Representative (COTR).

Serves as technical liaison between the contractor and the Contracting Officer by monitoring the contractor's performance and delivery of the final products and/or services under the contract.

Assures technical proficiency and compliance with the technical provisions of the contract by reviewing and verifying the performance of work by the contractor.

Ensures the contractor complies with the defined Statement of Work or specifications included in the contract. Assists the contractor and the Contracting Officer in interpreting technical requirements of the contract scope of work or specifications.

Reviews and evaluates the contractor's progress related to expenditures, and recommends approval/disapproval for payment as appropriate.

Recommends and justifies changes desired in scope and/or technical provisions of the contract.

Factor 1- 9 Knowledge Required by the Position

Mastery of a range of specialized areas in aerospace engineering sufficient to originate concepts and effect new developments applicable to emerging functions of a national magnitude and with long-term purposes. Typically, this position is recognized as a national or international expert in a specialized area of aerospace engineering.

Factor 2- 5 Supervisory Controls

The supervisor provides guidance solely in the form of general legislative, mission, or policy directions and resource constraints. The engineer typically initiates new projects or activities independently and keeps the supervisor informed of progress in planning, coordinating, and implementing the work and resolving conflicts. Recommendations and decisions of the engineer are accepted as technically sound even though final approval may depend on formal action by high-level management. The engineer has the highest degree of independence in seeking optimum technical or policy solutions to problems in the light of current engineering developments. Completed work is broadly reviewed for adherence to mission or legislative direction and for assurance that broad policy or program objectives are fulfilled.

Factor 3- 5 Guidelines

Guidelines are basic legislation and/or broadly stated agency regulations and policy statements. At this level the engineer is a recognized technical authority in the interpretation of such broad guidelines, and must exercise considerable judgment and ingenuity in interpreting

such broad guidelines, and must exercise considerable judgment and ingenuity in interpreting and adapting guides that exist; in developing new and improved hypotheses, concepts, or approaches not previously tested or reported; and/or in developing new policies that have the potential to take the organization (and the affected public) in new directions. The ideas, methods and procedures developed are on the cutting edge of technology and often serve as precedents for other scientists, engineers, or policy-makers within or outside the agency.

Factor 4- 6 Complexity

Work is characterized by broad and intensive efforts involving several kinds of problems where the controlling theory and practices are largely undefined, or where the engineering methods and practices are in a state of development or are extensively affected by advances in technology. Projects involve the full range of situations pertinent to various environments, requiring the development of new or refined methods and application of advanced technology. They may be of such scope and complexity that they require supportive projects, some of which are nonscientific in nature.

Factor 5- 6 Scope and Effect

The purpose of the work is to plan, develop, and execute major programs, projects, or activities for the agency which are usually of national scope and significance. Engineers often serve as experts or consultants to top level managers within the organization or to a broad consortium of experts and special interest groups who are seeking critical evaluations on problems that require long-range solutions. Actions and recommendations affect broad agency policies, programs and legislative proposals, or have an equivalent effect on other scientifically oriented agencies and organizations on a continuing basis.

Factor 6- 4 Personal Contacts

Contacts are with high ranking officials from outside the agency at national levels in highly unstructured settings.

Factor 7- 4 Purpose of Contacts

The purpose of contacts is to justify, defend, negotiate, or settle controversial and far-reaching matters through active participation in conferences, meetings or presentations. The persons contacted typically have diverse viewpoints, goals, or objectives, requiring the engineer to achieve a common understanding of the problem and a satisfactory solution by convincing others, arriving at a compromise, or developing suitable alternatives.

Factor 8- 1 Physical Demands

The work is primarily sedentary, although some physical effort may be required, e.g., walking, standing, carrying light items such as manuals or briefcases, or driving or traveling by motor vehicle.

Factor 9- 1 Work Environment

The work environment involves everyday risks or discomforts that require normal safety precautions typical of such places as offices, training rooms, and libraries. The work area is adequately lighted, heated, and ventilated. There may be occasional exposure to moderate risks or discomforts in storage areas or hazardous waste sites.